

**WHAT IS CLAIMED IS:**

1. A radiation-curable hot melt ink composition comprising:  
a colorant;  
a polymerizable monomer; and  
a photoinitiating system comprising 0.5-1.5% by weight of an aromatic ketone photoinitiator, 2-10% by weight of an amine synergist, 3-8% by weight of an alpha-cleavage type photoinitiator, and 0.5-1.5% by weight of a photosensitizer.
2. The radiation-curable hot melt ink composition of claim 1, wherein the polymerizable monomer is a multi-functional monomer.
3. The radiation-curable hot melt ink composition of claim 2, wherein the polymerizable monomer is an acrylate monomer.
4. The radiation-curable hot melt ink composition of claim 1, further comprising a diluent.
5. The radiation-curable hot melt ink composition of claim 4, wherein the diluent is a mono-functional or di-functional monomer.
6. The radiation-curable hot melt ink composition of claim 5, wherein the polymerizable monomer is a multi-functional monomer.
7. The radiation-curable hot melt ink composition of claim 6, wherein the polymerizable monomer is an acrylate monomer.
8. The radiation-curable hot melt ink composition of claim 1, wherein the radiation-curable hot melt ink composition has a viscosity ranging from about 1 centipoise to about 50 centipoise.

9. The radiation-curable hot melt ink composition of claim 1, further comprising a vehicle.

10. A radiation-curable liquid ink composition comprising:  
a colorant;  
a liquid polymerizable monomer; and  
a photoinitiating system comprising 2-4% by weight of an aromatic ketone photoinitiator, 5-10% by weight of an amine synergist, 5-10% by weight of an alpha-cleavage type photoinitiator, and 2-4% by weight of a photosensitizer.

11. The radiation-curable liquid ink composition of claim 10, wherein the polymerizable monomer is a multi-functional monomer.

12. The radiation-curable liquid ink composition of claim 11, wherein the polymerizable monomer is an acrylate monomer.

13. The radiation-curable liquid ink composition of claim 10, further comprising a diluent.

14. The radiation-curable liquid ink composition of claim 13, wherein the diluent is a mono-functional or di-functional monomer.

15. The radiation-curable liquid ink composition of claim 14, wherein the polymerizable monomer is a multi-functional monomer.

16. The radiation-curable liquid ink composition of claim 15, wherein polymerizable monomer is an acrylate monomer.

17. The radiation-curable liquid ink composition of claim 10, wherein the radiation-curable hot melt ink composition has a viscosity ranging from about 1 centipoise to about 50 centipoise.

18. A printing method, comprising:

printing a radiation-curable hot melt ink composition on a substrate to form an image, the composition comprising a colorant; a polymerizable monomer; and a photoinitiating system comprising 0.5-1.5% by weight of an aromatic ketone photoinitiator, 2-10% by weight of an amine synergist, 3-8% by weight of an alpha-cleavage type photoinitiator, and 0.5-1.5% by weight of a photosensitizer; and  
irradiating the image.

19. A printing method, comprising the steps of:

printing a radiation-curable liquid ink composition on a substrate to form an image, the composition comprising a colorant; a polymerizable monomer; and a photoinitiating system comprising 2-4% by weight of an aromatic ketone photoinitiator, 5-10% by weight of an amine synergist, 5-10% by weight of an alpha-cleavage type photoinitiator, and 2-4% by weight of a photosensitizer; and  
irradiating the image.